

What Is Claimed Is:

1. A tower heat pipe comprising:

a tube having an internal surface at least partially covered with a wick, a working fluid disposed within said tube, a sealed first end, and at least one fin projecting radially outwardly from an outer surface of said tube;

a base sealingly fixed to a second end of said tube, and having a grooved sintered wick disposed on at least a portion of an internal surface;

said grooved sintered wick comprising a plurality of individual particles which together yield an average particle diameter, and including at least two lands that are in fluid communication with one another through a particle layer disposed between said at least two lands wherein said particle layer comprises at least one dimension that is no more than about six average particle diameters.

2. A tower heat pipe according to claim 1 wherein said particle layer comprises a thickness that is about three average particle diameters.

3. A tower heat pipe according to claim 1 wherein said particles are formed substantially of copper.

4. A tower heat pipe according to claim 1 wherein said six average particle diameters is within a range from about .05 millimeters to about .25 millimeters.

5. A heat pipe comprising:
- a tubular enclosure having an internal surface covered by a wick and sealed at a first end;
  - a base sealing fixed to a second end of said enclosure so as to form an internal surface within said enclosure;
  - a working fluid disposed within said enclosure;
  - at least one fin projecting radially outwardly from an outer surface of said tubular enclosure; and
  - a grooved sintered wick disposed upon said internal surface formed by said base, said grooved sintered wick comprising a plurality of individual particles which together yield an average particle diameter, and including at least two lands that are in fluid communication with one another through a particle layer disposed between said at least two lands wherein said particle layer comprises at least one dimension that is no more than about six average particle diameters.
6. A heat pipe according to claim 5 wherein said particle layer comprises a thickness that is less than about three average particle diameters.
7. A heat pipe according to claim 5 wherein said particles are formed substantially of copper.
8. A heat pipe according to claim 5 wherein six average particle diameters is within a range from about .005 millimeters to about .5 millimeters.

9. A heat pipe according to claim 5 wherein said particle layer extends between a terminal portion of said lands and adjacent portions of said enclosure on said internal surface.
10. A heat pipe according to claim 5 wherein said particle layer is formed from a material selected from the group consisting of carbon, tungsten, copper, aluminum, magnesium, nickel, gold, silver, aluminum oxide, and beryllium oxide.
11. A tower heat pipe comprising:
- a tube having an internal surface, a working fluid disposed within said tube, a sealed first end, and at least one fin projecting radially outwardly from an outer surface of said tube;
  - a base sealingly fixed to a second end of said tube, and having a grooved sintered wick disposed on at least a portion of an internal surface;
  - said grooved sintered wick comprising a plurality of individual particles which together yield an average particle diameter, and including at least two lands that are in fluid communication with one another through a particle layer disposed between said at least two lands wherein said particle layer comprises at least one dimension that is no more than about six average particle diameters.